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(No Model.)

H. LEMP.
ELECTRIC ARC LAMP.

No. 329,461.

Patented Nov. 3, 1885.

Fig. 1

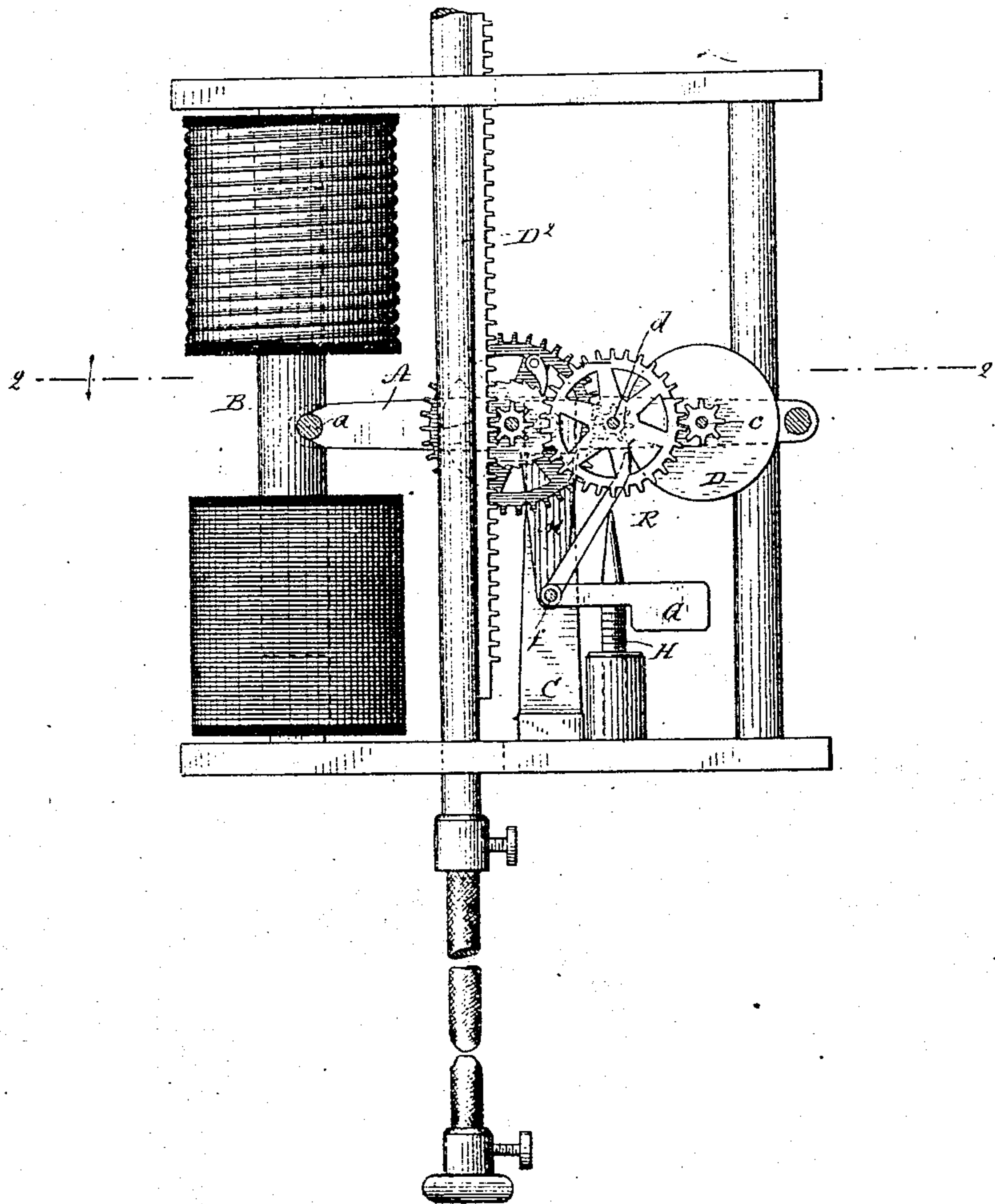
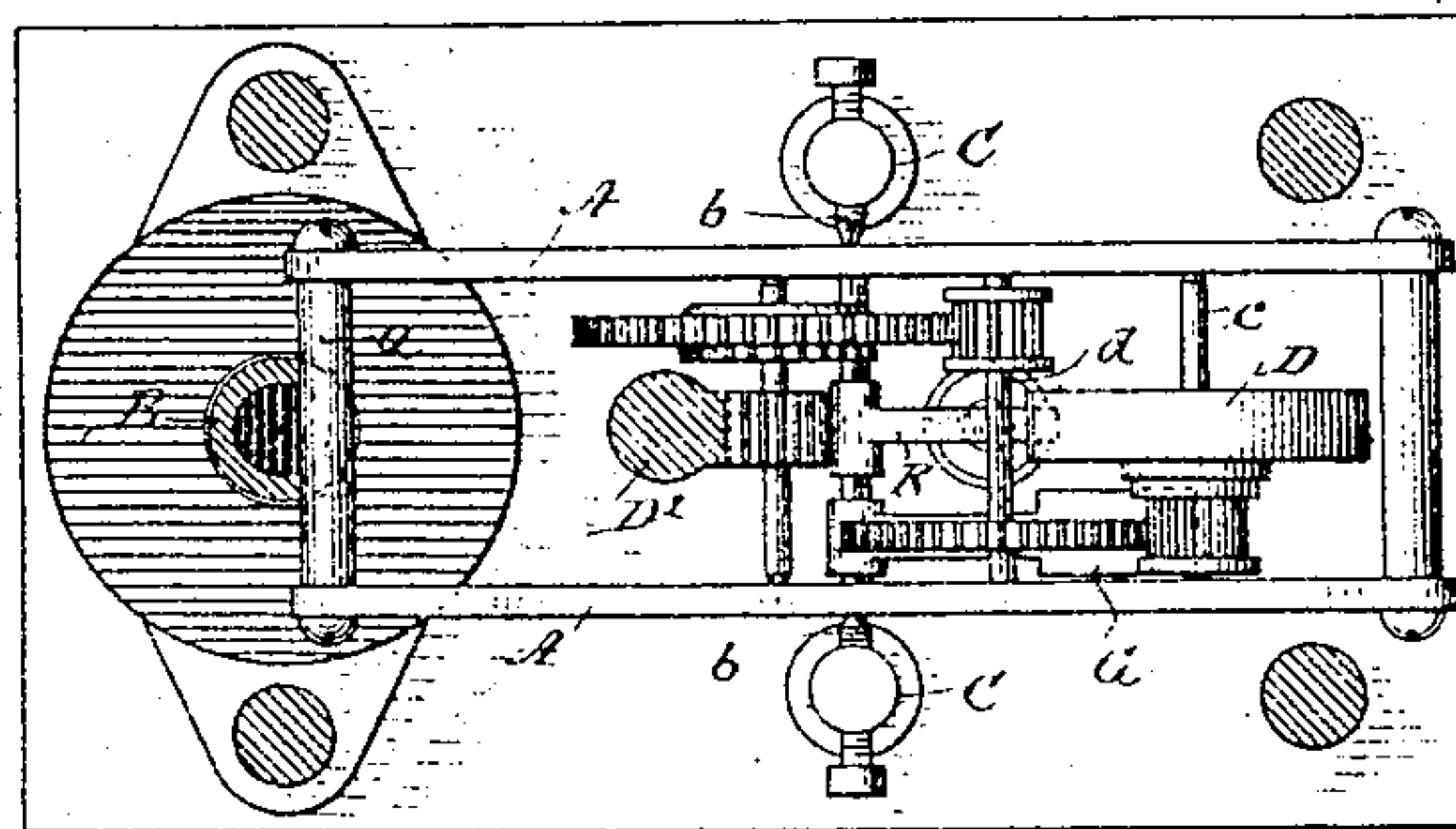


Fig. 2.



Witnesses:

Ernest Abshagen
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Inventor:

Hermann Lemp

By his Attorney: W. B. Townsend

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UNITED STATES PATENT OFFICE.

HERMANN LEMP, OF HARTFORD, CONNECTICUT, ASSIGNOR TO THE
SCHUYLER ELECTRIC LIGHT COMPANY, OF SAME PLACE.

ELECTRIC-ARC LAMP.

SPECIFICATION forming part of Letters Patent No. 329,461, dated November 3, 1885.

Application filed July 25, 1885. Serial No. 172,659. (No model.)

To all whom it may concern:

Be it known that I, HERMANN LEMP, a citizen of the United States, and a resident of Hartford, in the county of Hartford and State of Connecticut, have invented certain new and useful Improvements in Electric-Arc Lamps, of which the following is a specification.

My invention relates to those forms of electric-arc lamp in which the carbon or carbon-holder gears with a wheel or train of wheels that is stopped or released according as the carbon is to be held stationary or permitted to feed, and is designed more especially for application to that species of wheel-train lamp in which the wheels geared to the carbon are one or all mounted in a frame that is moved in one direction to carry the wheel-gearing with the carbon upward when the arc is to be formed or the distance between the carbons is to be increased, and is moved in the opposite direction for the purpose of effecting the disengagement of the wheel or train of wheels from the devices by which they are held from turning when a feed of the carbon should take place.

My present invention relates particularly to a means for releasing the clock-work or wheels gearing with the carbon and for stopping them.

The object of my present invention is to provide a simple and at the same time sensitive device whereby the mechanism may be released to permit a feed of the carbon to take place.

My invention consists in the special devices and combinations of the device described in connection with the accompanying drawings, and more specifically pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is an elevation of a lamp embodying my invention. Fig. 2 is a plan of the working parts.

A indicates the frame, in which the wheel or wheels gearing with the carbon-carrier are supported. This frame is hung or fulcrumed at points *b* on posts *C*, said posts being in turn mounted on the base-plate of the lamp or otherwise secured in place. The frame *A* is moved by means of a magnet-core, *B*, which is subjected to the action of the main-circuit coils *B'* and the derived circuit coils *B''*, after

a manner well understood in the art. The connection with the core is made by the cross-bar *a*, setting into a notch in the side of the core. The frame might be moved by any other magnet system of proper kind to raise the end of the frame when the carbons are to be separated for the purpose of forming the arc, and to depress the same when the arc increases to such length as to require a feed of the carbon to take place. The carbon-holder (indicated at *D'*) gears with a train of wheels, as indicated, said train terminating in a brake-wheel, *D*. The bearings for the intermediate gears are indicated at *e d c*. The construction of the gear is clearly shown. Its form, however, is immaterial, the purpose being only to permit a reduced or limited movement of the carbon-carrier for a given movement of the brake-wheel, as also in a degree to attain the retarding effects due to the presence of the intermediate gear-train. Extending downward from the frame *A A*, and at a point preferably near the centers upon which the frame is pivoted, are arms *M M*, in which is pivoted a brake or clutch lever, *R*, which is provided at its end touching the brake-wheel with a brake-surface, *m*, of any desired form, that is caused to engage with the brake-wheel by a weight, *G*, connected to the lever in any suitable manner—as, for instance, by being supported on an arm extending from the spindle from which the lever *R* extends, as shown. The brake engages with the wheel at a point to one side of the point at which a line drawn from the pivotal point of the brake perpendicular to the circumference of the wheel will strike the surface of the wheel, so that there will be a wedging action as the wheel turns in a direction opposite to that in which the hands of a clock turn, or from right to left.

H indicates a stop, located beneath and to one side of the lever *R*, in such position that when the arm *M* is turned to the right the back edge will be disengaged from the brake-wheel. The weight *G* serves also to assist in balancing the weight of the carbon-holder and the wheel-work. By supporting the brake in the arms *M*, I am enabled to secure an extended movement of the brake under the action of the magnet system, and to add to the sensitiveness of the mechanism to changes in arc length.

When the current is sent through the lamp, the main-circuit coil raises the core and lifts the end of the frame A, connected with it, so as to raise the carbon-holder, the train of wheels being at such time held from turning by means of the brake acting on the brake-wheel. At such time the brake or brake-lever R acts like a wedge upon the surface of the brake-wheel and prevents the same from moving. When the core B sinks so that the frame A is lowered below the horizontal or intermediate position between the main and derived circuit coils, the brake-lever is brought into contact with the stop H, and by a sliding movement produced by the brake F turning in a circle around the point b the lever R is slowly elevated, and the brake disengaged from its grip on the brake-wheel, thus permitting the carbon-holder to slightly descend. As soon as the carbon has fed to the proper point, the main coil pulls the core up again, and the brake drops onto the brake-wheel, stopping its motion instantly. The more quickly it falls, or the more quickly the brake-wheel turns, the more quickly and powerfully will the brake wedge itself against the brake-wheel.

By the construction above described the lamp may be made very simply with few parts. The lamp may also be made very strong and at small expense.

What I claim as my invention is—

1. The combination, in an electric-arc lamp, of a carbon or carbon-carrier, a wheel-work mounted on a pivoted frame or lever, a brake-wheel gearing with the wheel-work and also mounted on said frame or lever, a pivoted brake-lever supported from the frame and normally engaging with the brake-wheel, and a fixed stop for acting upon the brake-lever.
2. The combination, with the arc-lamp brake-wheel mounted on the pivoted frame, of the pivoted brake-lever mounted on an arm or arms extending downward from said frame, and a releasing stop arranged with relation to

the lever, as described, so that the latter may by the lateral movement of the arm be disengaged from the stop.

3. The combination, with the brake-wheel mounted on the frame, of the pivoted brake-lever mounted in a downward extension from the frame at a point below the brake-wheel and extending upward at an angle to engage therewith, of the stop engaging with the lever between its pivotal point and its engaging end, and for the purpose described.

4. The combination, with the brake-wheel mounted on the frame, of the brake-lever mounted in the frame on the side of the wheel toward the pivot and at a point below the level of the wheel, and the stop H, arranged to one side of the brake-lever, as described.

5. The combination, with the brake-wheel, of the brake-lever mounted in the downwardly extending arm M, the weight G, connected to the lever, and a suitable stop for releasing the brake-lever from the brake-wheel, as and for the purpose described.

6. The combination, with the brake-wheel mounted on the pivoted frame, of the pivoted brake-lever, also pivoted on an extension of said lever, and the stop H, mounted on a fixed support, all arranged and combined as shown and described.

7. In an electric-arc lamp, a pivoted clock-work frame carrying the train of wheels for engagement with the carbon carrier and provided with a downwardly-extending arm, M, carrying the brake-lever for acting on the brake-wheel of said clock-work, as and for the purpose described.

Signed at Hartford, in the county of Hartford and State of Connecticut, this 6th day of July, A. D. 1885.

HERMANN LEMP.

Witnesses:

B. E. DUNSTEN,
MERLE J. WIGHTMAN.

Correction in Letters Patent No. 329,461.

It is hereby certified that Letters Patent No. 329,461, granted November 3, 1885, upon the application of Hermann Lemp, of Hartford, Connecticut, for an improvement in "Electric Arc Lamps," was erroneously issued to "The Schuyler Electric Light Company, of Hartford, Connecticut;" that said Letters Patent should have been issued to *The Schuyler Electric Light Company of New York*; and that said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 8th day of December, A. D. 1885.

[SEAL.].

Countersigned:

M. V. MONTGOMERY,
Commissioner of Patents.

H. L. MULBROW,
Acting Secretary of the Interior.

Correction in Letters Patent No. 329,461.

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Signed, countersigned, and sealed this 8th day of December, A. D. 1885.

[SEAL.]

H. L. MULDROW,
Acting Secretary of the Interior.

Countersigned:

M. V. MONTGOMERY,
Commissioner of Patents.